EC5ELC2

Reg. No. ☐☐☐☐☐☐☐☐☐☐☐

Fifth Semester B.E. Degree Examination, August 2001

EC/TE/CC/CV/TR/EE/PM/CH
Object Oriented Programming

Time: 3 hrs.]   [Max.Marks : 100

Note: *Answer any FIVE questions.*

1. (a) Differentiate clearly between C and C^{++} programming language features.
(5 Marks)

(b) Write an explanatory note on Cin & Cout.   (5 Marks)

(c) Explain the following terms associated with OOP.
(i) Encapsulation.   (iii) Overloading
(ii) Data hiding   (iv) Inheritance.   (10 Marks)

2. (a) How does C^{++} do the type conversion automatically.   (5 Marks)

(b) Explain with syntax, the nested if...else structure. Mention its disadvantages over switch statement.   (5 Marks)

(c) Write a C^{++} program to find the roots of a quadratic equation $(ax^2 + bx + c = D)$ using switch statement.   (10 Marks)

3. (a) What is a manipulator. Explain the different manipulation used in C^{++} with example.   (4 Marks)

(b) What is recursion? Write a program to find the factorial of a number by recursion.   (6 Marks)

(c) Write a program to add two distances. Distance is measured in feet and inches. For ex. 12'6" (12 feet 6 inches) the output should be in the same format. Make use of structure.   (10 Marks)

4. (a) What are the different ways of passing arguments to a function? Explain.
(5 Marks)

(b) Write a note on 'new' and 'delete' operators.   (5 Marks)

(c) What is function plymorphism? Write a C^{++} program to illustrate function polymorphism to compute the area of a rectangle and a triangle. (10 Marks)

5. (a) What is a class? Explain the use of scope resolution operator.   (5 Marks)

(b) Write a C^{++} program which creates object student for a class with member function to get the student data and display the same. Data items in class are first name, second name and year in which the student is studying.
(10 Marks)

(c) What is the use of constructor? What are the different types of constructors? Explain.   (10 Marks)

6. (a) What is operator overloading? Write a C^{++} program to illustrate the overloading of logical and relational operators.   (10 Marks)

(b) Write an explanatory note on 'VIRTUAL FUNCTIONS'.   (5 Marks)

(c) Differentiate automatic, static and external variable.   (5 Marks)

7. (a) What do you mean by 'Class Inheritance"? Write a C^{++} program to illustrate multiple inheritance. **(10 Marks)**

   (b) What is stream? Write a note on the stream class heirarchy. **(6 Marks)**

   (c) Explain what file pointers are and how they are manipulated? **(4 Marks)**

8. (a) Write a note on the VC^{++} work bench. **(5 Marks)**

   (b) Explain the view menu options provided by $VC++$ **(5 Marks)**

   (c) What is the importance of MFC Liberary. **(5 Marks)**

   (d) Write a note on the Dialog controls provided by $VC++$. **(5 Marks)**

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Reg. No. ☐☐☐☐☐☐☐☐☐☐

Fifth Semester B.E. Degree Examination, July/August 2002
Electronics and Communication/ Telecommunication Engineering
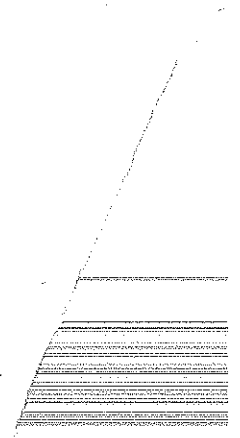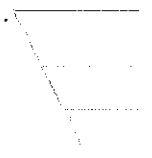## Object Oriented Programming

Time: 3 hrs.]
[Max.Marks : 100

Note: *Answer any FIVE full questions.*

1. (a) Explain the following terms
   i) Encapsulation   ii) Data Hiding   iii) Inheritance.   (10 Marks)

   (b) Compare structured programming and object oriented programming.   (6 Marks)

   (c) Differentiate between break and continue statements.   (4 Marks)

2. (a) Explain the various looping constructs in C^{++} with suitable examples (Code segments).   (6 Marks)

   (b) Explain the use of switch statement with a suitable example program.   (6 Marks)

   (c) Write a program to find the factorial of a number using recursion.   (8 Marks)

3. (a) Explain with suitable program the concept of passing arguments to a function by value and by reference.   (10 Marks)

   (b) Explain function overloading with a suitable program.   (10 Marks)

4. (a) Explain briefly the concept of a class.   (5 Marks)

   (b) Write a C^{++} program to perform addition of two complex numbers by overloading the operator "+".   (10 Marks)

   (c) List the characteristics of constructors.   (5 Marks)

5. (a) Bring out the concept of friend function with a suitable example involving two classes.   (10 Marks)

   (b) Write a note on new and delete operators.   (5 Marks)

   (c) Explain the term 'type casting' with a suitable example.   (5 Marks)

6. (a) Explain multiple inheritance with a suitable example.   (10 Marks)

   (b) What are virtual functions? Explain with an example.   (10 Marks)

7. (a) What are streams in C^{++}? Explain the stream class hierarchy.   (10 Marks)

   (b) Explain with a program how to write an object to a disk file.   (10 Marks)

8.   Explain the following.

   a)   Data types in C^{++}.   (7 Marks)

   b)   Function overriding.   (7 Marks)

   c)   Destructors.   (6 Marks)

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Reg. No. ☐☐☐☐☐☐☐☐☐☐

Fifth Semester B.E. Degree Examination, January/February 2003

Common to EC / TE / CC / EE / IT / CV / TR / PM / CH

Object Oriented Programming

Time: 3 hrs.]   [Max.Marks : 100

Note: *Answer any FIVE full questions.*

1. (a) What is a class? Give detailed syntax to declare a class.   (10 Marks)

   (b) Describe a constructor and destructor. In what situation an overloaded constructor and a copy constructed are used?

                                                                           (10 Marks)

2. (a) Classify all data types in c^{++}.   (8 Marks)

   (b) Classify all statements in C^{++}.   (4 Marks)

   (c) Explain with syntax and flow chart the looping constructs in C^{++}. (8 Marks)

3. (a) Give the syntax to declare a function. Explain every token and scope rules.
                                                                           (10 Marks)

   (b) With example explain different ways in which arguments are passed to a function.   (10 Marks)

4. (a) What is the need to overload built in operators in C^{++}? How is operator overloading achieved? Write a program to illustrate over loading of the unary increment operator '++' both prefix and postfix versions.   (10 Marks)

   (b) What is friend function? How can a friend function be used to have flexibility in overloading the addition operator '+'?   (10 Marks)

5. (a) Explain compile time and run time function polymorphism, with examples.
                                                                           (10 Marks)

   (b) What is a pure virtual function? Explain its utility.   (10 Marks)

6. (a) Explain with a sample program the need for a virtual base class.   (10 Marks)

   (b) How dynamic memory allocation managed in c^{++}. Write a sample program to demonstrate dynamic memory allocation of an integer and an integer array of 20 elements.   (10 Marks)

7. (a) What is a file mode? Describe various file modes available.   (10 Marks)

   (b) How is console I/O managed in C^{++}.   (10 Marks)

8. Write notes on :

   i) This pointer

   ii) Manipulators

   iii) Base class inheritance mode

   iv) Static data member and member function.

   (4×5=20 Marks)

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Fifth Semester B.E. Degree Examination, January/February 2004

Common to EC / TE / CC / EE / IT / CV / TR / PM / CH

Object Oriented Programming

Time: 3 hrs.]   [Max.Marks : 100

Note: 1. *Answer any FIVE full questions.*
2. *All questions carry equal marks.*

1. (a) Explain the insertion and extraction operators and their cascading, taking suitable example programs. **(6 Marks)**

   (b) Develop one C^{++} program to show the effect of manipulators (endl' and 'setw') and type convertions (automatic and casts) on the result of the program. **(8 Marks)**

   (c) Discuss the procedence of all types of operators for program execution in C^{++} **(6 Marks)**

2. (a) Discuss the syntax of the three C^{++} - loops, taking suitable program examples. State the utility of the loops under different circumstances. **(10 Marks)**

   (b) Mention different forms of "if" statements, taking different program segments. How does it compare with "switch" statement and use of conditional operator. **(10 Marks)**

3. (a) State clearly the syntax of a structure. Write one C^{++} program to illustrate the concept of structure within a structure. Explain the memory accessing of structure members. **(10 Marks)**

   (b) Discuss with C^{++} - program, the two characteristics, ie, life time and visibility of automatic variables. **(10 Marks)**

4. (a) Develop one C^{++} program to justify the returning of objects from function. Also, show the corresponding output. **(10 Marks)**

   (b) In order to pass a two dimensional array. (4 rows × 3 columns) to a function which displays the array element values, develop one C^{++} - program and show the output. **(10 Marks)**

5. (a) Using binary operator overloading, write a program to achieve the addtion of two graphical points in polar coordinates. Also, show the output of the program. **(10 Marks)**

(b) Write down a program to show the inheritance concept in programming and discuss the relevant features. (10 Marks)

6. (a) What are overriding member functions ? Simulate the operations of a computer memory stack using overriding member functions in C^{++} program. Indicate the output. (10 Marks)

(b) With a suitable C^{++} program, explain the concept of pure virtual function and hence, get the output. (10 Marks)

7. (a) Sketch the stream class hierarchy of C^{++} and explain briefly. (10 Marks)

(b) List the different menus available in visual C^{++} menu system. Explain any three of them. (10 Marks)

8. Write short notes on :

a) Constructor and destructor (5 Marks)

b) Private, Public, Protected - Access specifiers (5 Marks)

c) Polymorphism (5 Marks)

d) Friend function (5 Marks)

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EC5ELC2

USN ☐☐☐☐☐☐☐☐☐☐

Fifth Semester B.E. Degree Examination, July/August 2004

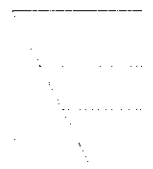Common to EC / TE / CC / EE / IT / CV / TR / PM / CH

Object Oriented Programming

Time: 3 hrs.]   [Max.Marks : 100

Note: *Answer any FIVE full questions.*

1. (a) Discuss the use of extraction and insertion operators with manipulators setw and endl in C^{++} object oriented programs. Show typical outputs of execution.
(6 Marks)

   (b) Using typical C^{++} programs show how type conversions-automatic and casting influence the output.
(6 Marks)

   (c) Supply the lists of the following :

   i) Summary of C^{++} variable types, their numerical range, number of bytes of memory storage.

   ii) Summary of precedence of all operators.
(8 Marks)

2. (a) Compare and contrast the implementation of 'switch' and 'if' else statements in C^{++} programs. Show the corresponding typical output.
(6 Marks)

   (b) Illustrate with a program the concept of returning of structure variables from function to the main program. Mention the program output.
(9 Marks)

   (c) Incorporating the enumerated data types in objectoriented programs, obtain output after execution with typical input data.
(5 Marks)

3. (a) Develop a main program and functions to show the passing of simple data types by reference and returning by reference.
(10 Marks)

   (b) Distinguish between constructors and destructors. Construct a C^{++} program using objects as function arguments and defining the member function outside the class, to compute the sum of two distance values (in feet and inches). Show the result of execution.
(10 Marks)

4. (a) Develop a typical program which reads data from keyboard and stores as structure which forms an element of an array. After memory accessing, the program displays the data. Also, show the output after execution. (10 Marks)

   (b) Using binary operator overloading, compute with C^{++} program the addition of two polar points and hence, display the output of the program. (10 Marks)

5. (a) With the concept of inheritance in C^{++} program, show how the member functions of a class are over ridden in a program to implement a memory stack of a computer and hence, the output of the program.
(10 Marks)

(b) With suitable diagrams, discuss the different access specifiers with inheritance.

(10 Marks)

6. (a) Discuss the output effect of the presence and absence of the work 'virtual' in the declaration of a program with virtual member functions accessed with pointers.

(10 Marks)

(b) Write a C^{++} program to show how a friend function can work as a bridge between two classes.

(10 Marks)

7. (a) Draw a neat block diagram of stream class hierarchy and explain. (10 Marks)

(b) With data streams and program segments show how redirecting output, input and both, simultaneously, are possible with object oriented programming.

(10 Marks)

8.   Write short notes on :

a) Static automatic variables

(5 Marks)

b) 'new' and 'delete' operators.

(5 Marks)

c) Copy constructor

(5 Marks)

d) 'this' pointer.

(5 Marks)

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EC5ELC2

USN ☐☐☐☐☐☐☐☐☐☐

Fifth Semester B.E. Degree Examination, July/August 2005

Common to EC / TE / CC / EE / IT / CV / TR / PM / CH
(Old Scheme)
Object Oriented Programming

Time: 3 hrs.]   [Max.Marks : 100

Note: *1. Answer any FIVE full questions.*
2. A sample program is expected wherever an example is requested.

1. (a) Explain the object oriented programming features.   (10 Marks)

   (b) Give the structure of a typical $C++$ program.   (10 Marks)

2. (a) Explain the identifier namming reels in C++ with examples.   (4 Marks)

   (b) Explain the data types in C++ with declaration syntax for each.   (8 Marks)

   (c) Explain the variable access modifiers and storage class specifier.   (8 Marks)

3. (a) What are pointers? Explain the pointer operators with example.   (8 Marks)

   (b) Classify statements in C++, give the syntax for each.   (12 Marks)

4. (a) Explain different types of functions call in C++ with examples.   (10 Marks)

   (b) What is a friend function. Explain the utility of a friend function with example.
                                                                            (10 Marks)

5. (a) With example explain the function overloading rules.   (4 Marks)

   (b) What are constractors, explain constractor overloading and copy constractor.
                                                                            (8 Marks)

   (c) Write a program to overload operator ++ both prefix and postfix versions.
                                                                            (8 Marks)

6. (a) Explain various inheritance types.   (4 Marks)

   (b) Explain with example various base class access specifier and its influence on inheritance of base class members.   (8 Marks)

   (c) With an example program, explain runtime polymorphism.   (8 Marks)

7. (a) What is a stream in C++, explain the stream classes for console I/O operation.
                                                                            (10 Marks)

   (b) Explain the file pointers and their manipulation.   (10 Marks)

8.   Write short note on :
   a) Predefined C++ streams   (5 Marks)
   b) Destractor   (5 Marks)
   c) Dynamic allocation of memory in C++   (5 Marks)
   d) Type conversion in expressions.   (5 Marks)

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